Carrier Ethernet Series

IGS-2510: Industrial 8-Port 10/100/1000Base-T + 2-Port 100/1G/2.5G SFP L2 Plus Carrier Ethernet Access Switch

Key Features

- L2+ features provide better manageability, security, QoS, and performance
- IEEE 802.3ah MAC Layer OAM and IEEE802.1ag Ethernet CFM
- ITU-T Y.1731 Ethernet OAM Performance monitoring
- 802.3az Energy Efficient Ethernet standard
- MEF E-tree service over MPLS (includes E-LINE, E-LAN and E-TREE(EP-TREE, EVP-TREE))
- IPv6 and s-Flow supports
- ITU-T G.8031 Ethernet Linear Protection and ITU-T G.8032v2 Ethernet Ring Protection Switching
- Sync-Ethernet (by request) and IEEE 1588v2 PTP for Carrier Ethernet management requirement
- Supports 24VDC power input (range 18~36V)

Overview

The IGS-2510 is next generation industrial (-40℃~75℃) L2+ Carrier Ethernet Access Switch, that meets all IEEE 802.3/u/x/z Gigabit, Fast Ethernet specifications. The IGS-2510 includes 8-Port 10/100/1000Mbps TP and 2-Port 100M/1G/2.5G SFP interface. It provides the ideal combination of affordability and capabilities for Carrier Access networking includes IEEE802.3ah MAC Layer OAM, IEEE802.1ag Ethernet CFM, ITU-T Y.1731 Ethernet OAM Performance Monitoring, ITU-T G.8031 Ethernet Linear Protection, ITU-T G.8032v2 Ethernet Ring Protection Switching, Sync-Ethernet (by request) and IEEE1588v2 PTP for Carrier Ethernet management requirement. It is suitable for Carrier Ethernet applications and helps you create a more efficient, better-connected workforce. This switch can be managed through RS-232 serial port, or through Ethernet port using CLI or Web-based management. With the SNMP agent, the network administrator can manage the switch, configure and control in a friendly way.

Applications

Whether you want to create a high-performance carrier Access network to connect all clients' computers or an application to deliver data, voice, and video services, the IGS-2510 switch provides a solution to fit your requirements. Possible carrier Ethernet implement scenarios include:

- **IEEE 802.3ah Ethernet OAM, IEEE 802.1ag Ethernet CFM and ITU-T Y.1731 Performance Monitoring:**
  The IGS-2510 switch provides the OAM features: simple link-level information, track end-to-end connectivity across the network and performance statistics. Simple link fault management (LFM) for Ethernet links is defined in IEEE 802.3ah. IEEE 802.1ag Ethernet CFM(Connectivity Fault Management) provides Fault monitoring using the continuity check protocol, Path discovery and fault verification using the link trace protocol and fault isolation using the loopback protocol. ITU-T Y.1731 allows network administrator to monitor frame delay, frame delay variation, frame loss and availability between two nodes of the network.
- **ITU-T G.8032v2:**
  The IGS-2510 switch supports ITU-T G.8032v2 which defines the multi-node ring protection architecture for native Ethernet networks. This is important as carriers want to move away from SONET/SDH to a native Ethernet based infrastructure.
- **Sync-Ethernet (by request) and IEEE1588v2 PTP:**
  The IGS-2510 switch supports comprehensive IEEE 1588v2 and Synchronous Ethernet emulation. Both IEEE 1588v2 and ITU-T Sync-E Ethernet synchronization protocols can emulate link OAM and service OAM protocols. The IEEE 1588v2 PTP standard addresses frequency, phase, and time-of-day synchronization requirements, making it ideal for applications such as LTE TDD.
- **Unified communications with open standards:**
  To be a managed network solution, it provides the high performance and advanced networking quality to deliver all networking communications and data (such as IP telephony, IP surveillance, and Video Streaming) over a single network.
- **Advanced network security:**
  The IGS-2510 switch provides enhanced and advanced network security to guests in public or private area, such as a hotel, an office lobby, or any area open to guests. Using powerful but simple to install security and traffic separating abilities, through guest VLAN or guest access control technology, it will help you to isolate vital networking traffic from guest services and keep guests' network sessions private from each other.

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Product Specifications

Feature	Description		
Performance			
	Model Name	**Capacity in Millions of Packets per Second (mpps) (64-byte packets)**	**Switching Capacity in Gigabits per Second (Gbps)**
Switching capacity and forwarding rate	IGS-2510	29.76	20
Layer 2 Switching			
Spanning Tree Protocol (STP)	Standard Spanning Tree 802.1d Rapid Spanning Tree (RSTP) 802.1w Multiple Spanning Tree (MSTP) 802.1s		
Trunking	Support for IEEE 802.3ad Link Aggregation Control Protocol (LACP) • Up to 5 groups • Up to 4 ports per group		
VLAN	Support for up to 4K VLANs simultaneously (out of 4096 VLAN IDs) • Port-based VLAN • 802.1Q tag-based VLAN • MAC-based VLAN • Management VLAN • Private VLAN Edge (PVE)		
Voice VLAN	Voice traffic is automatically assigned to a voice-specific VLAN and treated with appropriate levels of QoS		
Generic VLAN Registration (GVRP)	Protocols for automatically propagating and configuring VLANs in a bridged domain		
DHCP Snooping	DHCP snooping provides security by filtering un-trusted DHCP messages and by building and maintaining a DHCP snooping binding table.		
IGMP v1/v2/v3 snooping	IGMP limits bandwidth-intensive multicast traffic to only the requesters		
IGMP Proxy	Support IGMP Proxy		
MLD v1/v2 snooping	Deliver IPv6 multicast packets only to the required receivers		
Security			
Secure Shell (SSH) Protocol	SSH secures Telnet traffic in or out the switch, SSH v1 and v2 are supported		
Secure Sockets Layer (SSL)	SSL Support: Encrypts the http traffic, allowing advance secure access to the browser-based management GUI in the switch		
IEEE 802.1X	IEEE802.1X: RADIUS authentication, authorization and accounting, MD5 hash, guest VLAN , single/multiple host mode and single/multiple sessions Supports IGMP-RADIUS based 802.1X Dynamic VLAN assignment		
Layer 2 isolation Private VLAN Edge (PVE)	PVE (also knows as protected ports) provides L2 isolation between clients in the same VLAN, supports multiple uplinks		
Port Security	Locks MAC Addresses to ports, and limits the number of learned MAC addresses		
IP Source Guard	Prevents datagram with spoofed addresses from being in the network		
RADIUS/ TACACS+	Supports RADIUS and TACACS+ authentication. Switch as a client		
Storm control	Broadcast, multicast, and unknown unicast		
ACLs	Support for up to 4096 entries Drop or rate limitation based on source and destination MAC, VLAN ID or IP address, protocol, port, differentiated services code point (DSCP) / IP precedence, TCP/ UDP source and destination ports, 802.1p priority, Ethernet type, Internet Control Message Protocol (ICMP) packets, IGMP packets, TCP flag		
Quality of Service			
Hardware Priority Queue	Support 8 hardware queues		
Scheduling	Strict priority and weighted round-robin (WRR) Queue assignment based on DSCP and class of service (802.1p/ CoS)		

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Feature	Description
Classification	Port based; 802.1p VLAN priority based; IPv4/IPv6 precedence/ type of service (ToS) / DSCP based; Differentiated Services (DiffServ); classification and re-marking ACLs, trusted QoS
Rate Limiting	Ingress policer; egress shaping and rate control; per VLAN, per port and flow based
IPv6 applications	Web/ SSL, Telnet/ SSH, ping, Simple Network Time Protocol (SNTP), Trivial File Transfer Protocol (TFTP), SNMP, RADIUS, Syslog, DNS Client, protocol-based VLANs
Management	
Web GUI interface	Built-in switch configuration utility for browser-based device configuration (HTTP/ HTTPs). Supports configuration, system dashboard, maintenance, and monitoring
Dual Image	Dual image provides independent primary and secondary OS files for backup while upgrading (The function will be released at FW v1.00, the available schedule is August 2011)
SNMP	SNMP version1, 2c and 3 with support for traps, and SNMP version 3 user-based security model (USM)
Remote Monitoring (RMON)	Embedded RMON software agent supports RMON groups 1,2,3,9 (history, statistics, alarms, and events) for enhanced traffic management, monitoring and analysis
IPv4 and IPv6 dual stack	Coexistence of both protocol stacks to migration
Firmware upgrade	• Web browser upgrade (HTTP/ HTTPs) and TFTP • Upgrade through console port as well • Rubyview to deploy the switch firmware
Port mirroring	Traffic on a port can be mirrored to another port for analysis with a network analyzer or RMON probe. Up to 8 source ports can be mirrored to single destination port. A single session is supported.
Other management	HTTP/HTTPs; SSH; RADIUS; DHCP Client/ DHCPv6 Client ; SNTP; cable diagnostics; ping; syslog; Telnet client (SSH secure support)
s-Flow	The industry standard technology for monitoring high speed switched networks. It is enabling performance optimization, accounting/billing for usage, defense against security threats.
Green Ethernet	
Energy Detect	Compliant IEEE802.3az Energy Efficient Ethernet Task Force. Automatically turns off power on Gigabit Ethernet RJ-45 port when detecting link down or Idle of client. Active mode is resumed without loss of any packets when the switch detects the link up
Cable length detection	Adjusts the signal strength based on the cable length. Reduces the power consumption for cables shorter.
General	
Jumbo frames	Frame sizes up to 9KB supported on Gigabit interfaces
MAC Table	Up to 8K MAC addresses.
Discovery	
Link Layer Discovery Protocol (LLDP) (IEEE802.1AB) with LLDP-MED extensions	Used by network devices for advertising their identity, capabilities, and neighbors on a IEEE 802 local area network, principally wired Ethernet.
Carrier Ethernet Protocol and features	
IEEE 802.3ah Ethernet OAM	Simple link fault management (LFM) for Ethernet links is defined in IEEE 802.3ah
IEEE 802.1ag Ethernet CFM	IEEE 802.1ag Ethernet CFM function that provides connectivity fault management.
Sync-E(by request) and IEEE1588v2	Both IEEE 1588v2 and ITU-T Sync-E Ethernet synchronization protocols, and can emulate link OAM and service OAM protocols.
ITU-T Y.1731	ITU-T service OAM standard Y.1731 that divides a network into maintenance domains in the form of hierarchy levels.
ITU-T G.8032v2	G.8032v2 provides the standards-based method of delivering high-performance Carrier Ethernet services over a multi-node ring protection switching. This is important as carriers want to move away from SONET/SDH to a native Ethernet based infrastructure.

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Feature	Description					
Interface						
Ports	**Model Name**	**Total System Ports**	**RJ-45 Ports**	**UTP/SFP Combo**	**(100/1G/2.5G) SFP**	**Option Module**
	IGS-2510	10 GbE	8 GbE	--	2SFP	--
Environmental (preliminary)						
Dimensions	280(W)x 44(H) x 166(D)					
Weight (kg)	1.0Kg					
Power	24VDC Input (18-48V) (Terminal Block)					
Certification	CE Mark, FCC Part 15 (CFR47) Class A					
Operating temperature	-40°C to 75°C					
Storage temperature	-40°C to 85° C					
Operating humidity	10% to 90%, relative, noncondensing					
Package Contents						
• Switch • Mounting Kit (Rack Mount or Din Rail Kit is optional) • Console Cable • CD-ROM with user manual documentation (PDF) included • QIG (Quick Install Guide)						
Minimum Requirements						
• Web browser: Mozilla Firefox version 2.5 or later, Microsoft Internet Explorer version 6 or later • Category 5 Ethernet network cable • TCP/IP, network adapter, and network operating system (such as Microsoft Windows, Linux, or Mac OS X) installed on each computer in network						

Ordering Information

Model Name	Description
IGS-2510	Industrial 8-Port 10/100/1000Base-T + 2-Port 100/1G/2.5G SFP L2 Plus Carrier Ethernet Access Switch

Remark:
* Sync-E is reserved. It will be implemented by request.

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